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Pushing Basic Science and Training

Academe's New Friend in Washington: Industry

In the same long-ago fashion that "space," "environment," "cancer," and "energy" were once passwords in federal science-policy affairs, "industry" is now the word of the day.

It comes up so often that it's worth asking whether industry is taking over national science policy and thereby subordinating university-based research to commercial values. There are many worriers on that score, but, contrary to their expressed fears, SGR finds the situation less threatening than it looks. Academe is indeed pursuing industrial gold but there's nothing new in that. Meanwhile, the much-clucked-about federal role may actually be peripheral to this commercial activity on campus, and, in little-observed but important ways, supportive of traditional academic values. Commercial themes are booming on campus, but, curiously enough, Washington's reigning science policymakers are focusing on other matters.

Industry is certainly present on the Washington science-policy scene, more so than ever. But it is high-tech industry—remote from pennyminding NAM-style worries about government spending on university activities. And this high-tech faction, which has the Administration's ear on science-policy matters, is mainly interested in having universities churn out trained recruits for its

man and cheerleader for science, Presidential Science Adviser George A. Keyworth II. And anyone seeking the personifications of industry in Washington need look only to the National Science Foundation, where recently, for the first time in NSF's 35 years, an industrial scientist, Erich Bloch, a Vice President of IBM, has been appointed Director, filling a post that had previously gone to academics or government-employed basic scientists. At the same time, a Vice President of GE, Roland Schmitt, has been elected Chairman of NSF's policymaking advisory body, the National Science Board, succeeding a Vice President of IBM who held the post for four years, Lewis M. Branscomb.

But despite these appointments and a steady oratorical barrage about new priorities and programs, what's

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Drought May Be Ending For Lab Building Funds—Page 4

laboratories and lots of basic research for eventual commercial exploitation.

For these purposes, it has supported ample financing of university-based science and has resisted the ideological zealots in the Administration who want to clamp security restrictions on academic research. In addition, the high-tech faction is extremely wary of proposals to enlarge the engineering role of the National Science Foundation. It is keen for basic research, both as a product and as the training ground for industrial scientists and engineers, and it recognizes academe as uniquely useful institutions for doing the job.

Exhortations for universities to contribute to national economic rejuvenation are rarely absent from the platform performances of the Administration's chief spokes-

In Brief

The fight over who gets what and how in academic research support has spawned a series of anonymous memos about the club of the big R&D schools—the 50-member Association of American Universities, which has been lobbying for open competition and against politically brokered awards. The memos, circulating on Capitol Hill, point out that AAU members regularly dominate the competition. Twenty of them received 32 percent of NSF's grants last year; 18 AAU institutions got 30 percent of NIH's money. Other big hauls are also cited.

Who's sending around this stuff? One well-informed speculation is that it may be representatives, perhaps even employees, of a university that recently slipped a hand into the federal cookie jar for what is potentially one of the biggest hauls of recent times.

In a mighty rebuff to the Administration, the Senate Appropriations Committee has voted out a \$687-million increase in the NIH budget—15 percent above the current figure. Expecting the usual big Congressional boost, the Administration requested an increase of only \$105 million. But it didn't expect anything like what the Senate Committee delivered. Still to be heard from is the House Committee, which will take up its bill for final markup at the end of July.

No Shift in NSF Role, New Board Chief Pledges

Following, from a conversation with SGR June 22, are remarks by Roland W. Schmitt, GE Senior Vice President for Corporate Technology, who was elected in May to the chairmanship of the National Science Board, the policymaking body of the National Science Foundation:

Industry and Universities: The thing that this country has going for it, speaking as an industrialist, is the academic research organization. It's a thing that's unique in this country, in many ways. Its relationship with industry is unique . . . That has got to be the thing we make sure is strong. What I like about the Foundation and the National Science Board is that it is the target that we're aimed at . . . Industry has to have a strong, vigorous academic scientific and engineering research and education activity . . . for several reasons. The research results they produce [in universities] are important for us. Equally important, they produce the people we need. And there are some shortages and real problems there now. If you're trying to hire research-grade people in the fields of microelectronics and computer science today, it is just dramatic that the demands are so much higher than those produced . . . [Presidential Science Adviser George A.] Keyworth, to his everlasting credit, got this Administration to understand the key role that academic research plays in providing skilled, excellent manpower for the industrial sector . . .

Export Controls: There is no question in my mind that the Soviets are going all out to get whatever they

can from us [in science and technology] and they do, we know we it . . . One of the problems has been . . . that they sometimes deploy some of our technology in their weapons systems before we do it ourselves. I think you have to look at why that is so. One reason is the slowness of our own deployment . . . But even so, suppose they are stealing, the question you have to ask is what is your best strategy to . . . be better than they are. My position is very simple on that, that some of the steps being proposed now will damage our system of generating the technology far more than it will help stop the problem of leakage . . .

On GE and ex-IBM Vice Presidents Heading NSF: I don't see it as having any sinister or hidden meaning whatever. My position on academic research is a matter of public record long before I even came on the Board . . . I don't think any academics should have any apprehension over my dedication to the importance of that mission. [Regarding] Erich Bloch [the nominee for NSF Director]: the part of the academic community that knows him already . . . responds very favorably. I called up a number of people. I called up Frank Press [President of the National Academy of Sciences]; Press knows him well enough to feel comfortable with him . . . The point I want to make is I called around to a number of people just to make sure that I understood what the feelings might be, and, frankly, the people who knew him, felt absolutely comfortable with him . . . I don't see any hidden agendas. If there are, I don't know about them.

. . . Industry in Minority on White House R&D Council

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striking is that relatively little of a concrete nature has actually been done toward reorienting academic research in behalf of industry. There's no new bureaucracy to promote it, a la NASA or the Department of Energy. In fact, the Administration and its friends have dug in against Congressional proposals for an Applied Technology Foundation, which would focus on industrially related research. Outside of the Defense Department, which has openly bankrolled industrial research for 40 years, relatively little "new" money—the earnest of federal intent—has been deployed.

As for industrialists taking over the science-policy bureaucracy and turning it to commercial purposes, there's no doubt that high-tech industry is well represented in influential councils in Washington. But what tends to be overlooked is that industry identified the key spots three decades before the arrival of the Reagan Administration and regularly supplied executives to fill

them. Scientists, engineers and managers on detached duty from Bell Labs, IBM, GE, TRW and other firms have long been fixtures on Washington's high councils of science.

Are there more of them under Reagan? Probably so, but the numbers are far from overwhelming. The leading place to look, the 13-member White House Science Council, is chaired by a Vice President of Bell Labs, Solomon J. Buchsbaum, and includes four other members from industrial firms: Edward A. Frieman (a former academic), of Science Applications, Inc.; Harold Agnew, President of GA Technologies; Edward E. David Jr., President of Exxon Research and Engineering, and Robert O. Hunter Jr., President of Western Research Corp.

The Council includes four from universities: Allan Bromley, a Yale physicist; Paul Gray, President of MIT; Arthur K. Kerman, an MIT physicist, and Isidore

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... At NSF, More Talk Than Money for Industrial R&D

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M. Singer, a UC Berkeley mathematician. There are two members from federal laboratories, George A. Cowan, of Los Alamos, and Edward Teller, of Livermore (and the Stanford Institution on War and Peace). And then there's Donald S. Fredrickson, former Director of NIH, who is now Vice President of the Howard Hughes Medical Institute. Thus, the federal government's senior scientific advisory body is far from having been overrun by industry.

The same applies to the programs of the National Science Foundation, which has become extremely skillful at lullabying Congress about wondrous industrial activities while carrying on with its traditional role of financing basic research and training in universities.

Whenever an irate Congressman demands to know what NSF is doing to help American industry, the Foundation proudly describes its decade-old program of University/Industry Cooperative Research Centers. By all accounts, these have been highly successful in using federal seed money to draw together academic and industrial organizations for collaborative activities, with industry putting up most of the money. What often gets lost in the testimony, however, is that only a dozen centers have been established. This year, from an overall NSF budget of about \$1.5 billion, the program of University/Industry Cooperative Research Centers is budgeted for about \$3 million in NSF funds—which does not suggest any significant departure from the traditional role of the Foundation.

Has the industrial theme affected research support at the National Institutes of Health? Many of NIH's past and present grantees in recombinant DNA research are in the forefront of biotechnology commercialization, but most of them were off and running in that direction well before the Reagan Administration took office. Though there's no doubt that campus capitalism is appealing to the Administration's economic ideologues, its science advisers are pushing for NIH to put more emphasis on basic research in biotechnology and particularly in training more researchers in the field. Here again, industry has an academic agenda, but what it comes down to is that academe should stick to academic affairs.

Does the arrival of two industrial executives in the top

posts of NSF portend great changes? Bloch declined to talk to SGR before his Senate confirmation hearing, which has not yet been scheduled. But he was recruited with the approval of Keyworth, who regularly insists that basic research is NSF's sacred responsibility. That view of the Foundation's role is also firmly held by the newly installed NSF Board Chairman, Roland Schmitt, as can be seen in the accompanying excerpt from a recent conversation with SGR.

Perhaps the most revealing measure of the Reagan Administration's impact on academic science is that the leaders of the scientific community now readily acknowledge that the Administration has been very good to their profession and institutions. Many, if not most, of the chiefs looked with fear upon the arrival of the Administration, fully expecting the return of the hard times that Nixon imposed on scientific research. Instead, the Administration has set the money flowing, has championed the cherished principle of peer review (with minor deviations) and has finally come out against secrecy on campus.

There is a lot of blathering about industry and academe, but what tends to get overlooked is that the Administration's science policymakers have a traditional view of what academe can do to produce riches for industry.—DSG

Academy Reviewing Cyclamate

One of the longest-running disputes over carcinogenicity of a consumer product will return to public view July 31 when the National Academy of Sciences will hold an open meeting to receive comments on the banned artificial sweetener cyclamate.

The meeting is part of a review that the NAS Food and Nutrition Board is conducting under contract to the Food and Drug Administration, which ordered the Abbott Laboratories product off the market in 1970. That action followed reports that cyclamate was associated with cancer in laboratory animals. Abbott insists the findings resulted from a misreading of the data.

The FDA contract calls for the Board to provide a "reassessment of all relevant scientific data to determine whether the non-nutritive sweetener, cyclamate, is carcinogenic."

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Money for Lab Construction May Be Loosening Up

There's no money in sight yet, but conditions are ripening for an end to the decade-plus drought in federal money for construction and modernization of university laboratory buildings and research facilities. In fact, one academic lobbyist recently chirped to SGR that a building boom may be on the way.

Illustrated by tales of ramshackle buildings and outdated equipment, the subject has become a regular of the many Congressional hearings on the trendy subject of the health of American science. As is usually the case with such matters, several ponderous studies are underway.

But the first really important step came June 22 when the National Science Board, the policymaking body of the National Science Foundation, passed a resolution that pinpointed Fiscal 1986—which begins October 1, 1985—as a desirable starting date for a "pilot program providing support for renovation and new construction

The resolution linked the program to NSF's fledgling activities in biotechnology and advanced super computing, as well as its newly launched program to establish a series of interdisciplinary Engineering Research Centers on university campuses.

Keenly aware of the lobbying stampede that would be inspired by a new bundle of federal construction money, the Board recommended that the "entire process" should be subject to peer review.

The Board possesses no power to swing NSF affairs against the tide. But what's important here is that it's moving with the tide. Congress has heard nothing but sad tales about the facilities problem, and White House Science Adviser George A. Keyworth II has publicly stated several times that some resumption of federal assistance is in order. Furthermore, the Board is now headed by its first Reagan-appointed Chairman, Roland Schmitt, a GE Vice President, who ranks high in Keyworth's regard.

The Board took a broad view of the "facilities," problem, defining it to include "Construction of new and renovation of existing facilities—understood to include buildings and research platforms of various kinds, such as ships, field stations, etc.—and provision of the personnel required to operate and maintain those facilities."

The subject is currently under review by an NSF-led Ad Hoc Interagency Committee on Academic Research Facilities, comprising representatives from NIH and the departments of Defense, Energy, and Agriculture. The Board noted that the Committee's report is due by February 1985, but also asked the NSF Director—Erich Bloch, nominated but not yet confirmed—to report next month on the requested pilot program for Fiscal 1986.

The Board also staked out a bigger role for NSF in

Science Unemployment Rises

Scientists and engineers fared better than most workers in the recent recession, but unemployment rates in the two categories rose steadily and actually hit a 10-year high last year, according to the Bureau of Labor Statistics.

In 1983, when unemployment for all types of workers was reported at 8.6 percent, the figures for scientists was 3.2 and for engineers 3 percent. In terms of trends, what's notable about the numbers is that the 1983 unemployment rate for all workers represented a one-tenth of one percent decline from the previous year. For scientists and engineers, however, the unemployment rate went up, continuing a decade-long trend.

In 1973, when the national unemployment rate was 4.2 percent, the rate for scientists was 1.8 and for engineers 1 percent. By 1979, when the national rate was 5.1 percent, unemployment among scientists had risen to 2.2 percent, while for engineers, it was at 1.2 percent.

In 1980, the unemployment rate for scientists dropped by a tenth of a point, but rose to 2.4 percent in 1981 and 2.9 percent in 1982. For engineers, the rate rose from 1.3 percent in 1980, to 1.4 percent in 1981, and 2.4 percent in 1982.

biotechnology, stating that, though the field is booming, "there is widespread agreement that additional research is needed and that adjustments are required in some traditional approaches for training scientists and engineers."

Among the possible roles that it identified for NSF were "Increased support for key selected areas," including bioprocessing technologies; manipulation of plant and animal cells; transfer, cloning, structure, regulation and expression of genes pertinent to biotechnology; macromolecule design, synthesis and mode of action; and preservation of genetic diversity.

Referring to "areas of known personnel needs" in biotechnology, the resolution suggested consideration of graduate fellowship and postdoctoral programs and "activities to foster the development of new materials to be used in training such scientists and engineers." And it made it pitch for new biotechnology research facilities for "both young investigators and well-established laboratories whose equipment and facilities need refurbishing and/or replacement.

"Mechanisms that might be considered here," the resolution stated, "include the establishment of modern multiuser facilities with state-of-the-art instruments, special equipment and facilities grant programs, and equipment items provided on standard research grants."

Star Wars Sales Pitch: Keyworth Comes on Strong

White House Science Adviser George A. Keyworth II, widely credited with a major role in selling the "Star Wars" missile-defense program to President Reagan, has taken a prominent place in the vanguard of Administration spokesmen who are trying to sell it to everyone else. A melange of nasty assumptions about the Russians, grand prophecies of high-tech wonders to come, and insistence that Star Wars is the route to effective arms control, the Keyworth pitch is delivered with intensity and sincerity. Following are excerpts from a recent rendition, a talk titled "Strategic Defense: A Catalyst for Arms Reduction," delivered June 23 at The University of Virginia Center for Law and National Security:

■
We've based our national security on deterrence—the threat of massive nuclear retaliation if the Soviet Union attacks us with nuclear forces. But the Soviet Union seeks its national security goals not through deterrence but largely through the coercive threat of first strike. A look at their strategic forces shows their emphasis on the ability to deliver a rapid first strike, a means of destroying our ability to retaliate We must maintain thousands of nuclear weapons not to, as some people say, "destroy the world ten times over," but in order that some far smaller number of weapons will survive an enemy's first strike and be able to retaliate effectively

But at the same time we have to recognize that the march of technology makes that task [of retaliatory survival] harder and harder each year Even the strongest leg [of our retaliatory triad], our submarines, while as survivable as ever, could well be threatened in coming years by the incredibly rapid advances we're seeing these days in data-processing technologies.

On the other side, the Soviets must perceive that their strategic forces, which consist primarily of those silo-based ICBMs, will always be vulnerable to modernized US ICBMS. In times of crisis, the Soviet Union might then conclude that it must strike first So the two approaches . . . are not only fundamentally different, but their combination is fundamentally unstable.

One additional worry: the Soviets have not accepted the inevitability of mutual destruction in case of nuclear war. They . . . have an abiding belief that Russia . . . will survive to recover. And a nation that expects to survive a nuclear war has great incentive to try to limit possible damage by knocking out the enemy's strategic weapons first. On the other hand, two generations of Americans have been taught exactly the opposite—that there is no meaningful recovery from nuclear war We're caught in a spiral of conflicting philosophies.

The President's immediate challenge has therefore been to find and introduce a new and stabilizing factor, something to permit both the United States and the

Soviet Union to reduce their reliance on huge arsenals of nuclear weapons. Strategic defense can be that stabilizing factor

His initial goal is to defuse the most immediately destabilizing threat by making it clear to the Soviets that they can have no realistic expectations of launching a successful pre-emptive strike. But the President's ultimate goal is even more ambitious. It's to reduce the military effectiveness of nuclear weapons so drastically that they become unreliable for modern warfare

The enormous difference between the opportunities available to us today, compared to those of the 1960s, derives from monumental advances in science and technology. And let me assure you there are technologies emerging today that we simply couldn't have anticipated even a few years ago The latest example of how far we've come was demonstrated [June 10] when the Army [successfully tested an anti-missile missile]. In effect, what they did was hit a bullet with a bullet at a relative speed of more than 20,000 miles an hour This event . . . previews the arrival of the first generation of ultra-high-precision weapons necessary for a comprehensive defense system—and it gives lie to the critics' assertions that such technologies are "unworkable," "impossible," or "pie-in-the-sky"

Some people argue that the Soviets might be so threatened if we begin to introduce strategic defense that they might rush to a pre-emptive attack before our defenses become effective. But this suggestion ignores two facts. First, the Soviets strongly believe in strategic defense and already have a massive ballistic-missile-defense program underway. Second, during any transition period, both sides would retain their strong ability to retaliate if attacked

We would then enter a second transition period during which our defense posture would move toward increased reliance upon conventional, non-nuclear forces

I would characterize [1985-1990] as the period before we make any formal decisions about building a system, but during which we conduct R&D [This phase] would cause both sides to think seriously about rejecting the ICBM as a centerpiece of future strategic delivery systems [and] would force Soviet planners to rule out an effective first strike as an effective option. And . . . [it] would provide US and Soviet arms control negotiators with a common limited strategic objective, retaliation

The second phase, perhaps from 1990 to 2000, would be a time of continued development and initial deployment. There we begin to realize the major military capabilities. At that point, we can:

- Negate the [intercontinental, submarine-launched,

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DoD Sought to Squelch Critical Star Wars Report

The crackpot concepts underlying the Star Wars program are so technically shaky that the Administration has gone to extraordinary lengths to discredit critics.

The most blatant example concerns the Defense Department's demand June 4 that the Congressional Office of Technology Assessment (OTA) "withdraw" a 98-page study, "Directed Energy Missile Defense in Space," that was released to the outside world April 24 through a bit of a mixup. The demand was made by Deputy Secretary of Defense William H. Taft IV, who charged that the document contains "significant errors."

OTA Director John H. Gibbons turned down the request, asserting that the OTA staff had re-reviewed the paper and found it free of "serious technical errors." He added that the author's "assumptions are as plausible as those of your reviewers." But Gibbons also told Taft that "because of the extraordinary nature of your request," he had submitted the report for review by "several distinguished outsiders" previously unassociated with the study. Gibbons told SGR that he can't recall any previous demand for withdrawal of an OTA report.

The report in question is officially termed a "background paper," which, in the OTA scheme of things, means that it's not intended to have the depth or scope of OTA's fullscale studies, which usually take two to four years and run on for hundreds of pages. Background reports, OTA says, are designed to keep OTA abreast of "technologies that are the subject of frequent Congressional inquiry."

In this case, the hot subject was the President's Star Wars proposal of March 1983, which OTA con-

tracted out to Ashton B. Carter, a physicist at the MIT Center for International Studies. Carter, now at Harvard, had served on the OTA staff and had worked there on studies of ballistic-missile defense.

As noted in a preface to the published version of the background paper, "After Dr. Carter's work was underway, Senators Larry Pressler and Paul Tsongas of the Senate Foreign Relations Committee requested that the resulting paper be made available to that Committee as soon as possible."

As is the custom, Director Gibbons sent pre-release copies of the report to members of the OTA Board of Congressional overseers—none of whom commented on it, the apparent reason being that Congress was running full blast at the time. And then he sent the paper to Pressler and Tsongas. They promptly released it, and it received a great deal of publicity.

Of particular interest were its damning observations about the feasibility and legality, under the ABM treaty, of Star Wars defense. A "perfect or near-perfect defense system," it stated, "is so remote that it should not serve as the basis of public expectation or national policy about ballistic-missile defense." The report also concluded that "Deployment of missile defenses based on new technologies is forbidden by the Anti-Ballistic-Missile (ABM) Treaty reached at SALT 1."

Gibbons said that about 1000 copies had been distributed in response to requests. Copies are available without charge from the Office of Technology Assessment, Publications Office, 600 Pennsylvania Ave. Se., Washington, DC 20003; tel. 202/224-8996.

Keyworth

(Continued from page 5)

and intermediate-range missiles] as realistic first-strike options against strategic military objectives.

- Defend a limited set of either conventional military systems or populations.
- Introduce the capability, if implemented, to defend more effectively against . . . airplanes and cruise missiles.
- Enforce retaliation as the sole rationale for nuclear-delivery systems.
- In light of this balanced deterrence posture, provide a means to achieve drastic reductions in the numbers of offensive strategic arms . . .

Let me emphasize that strategic defense is not some technical hotshots' idea of becoming space warriors. What it is our attempt to use the tools we have—modern technology—to rewrite the strategic equations so that we can look forward . . . to a reasonably stable world . . .

Cooper to Retire from AAMC

John A. D. Cooper, President of the Association of American Medical Colleges since 1969, has announced that he'll retire in June 1986. The AAMC, which was headquartered in Evanston, Ill., when Cooper took over as its first fulltime President, is perhaps the most influential and smoothest running of the many academic lobbying outfits in Washington. Cooper said he's announcing his retirement early to leave lots of time to find a successor.

New Head for French R&D Office

Jean-Claude Derian, a physicist on the staff of French Prime Minister Mauroy, has been appointed head of the French Scientific Mission in Washington. He succeeds Jacques Bodelle, who has joined the New York office of Elf-Aquitaine, a French energy company, as a scientific representative.

In Print: Math, Acid Rain, Arms Control Analysis

Renewing US Mathematics: Critical Resource for the Future, report of a National Academy of Sciences committee, says the boom in computer-related sciences has masked neglect of mathematics research—which it said is still strong but hurting. The committee reported annual funding for math research at \$80 million, an estimated two-thirds of 1968 level in real dollars; it recommended an increase to \$180 million over the next five years. The 17-member committee, drawn from academe and industry, was chaired by former White House Science Adviser Edward E. David Jr., President of Exxon Research and Engineering.

(207 pages, no charge, available from Board on Mathematical Sciences, National Academy of Sciences, 2101 Constitution Ave. Nw., Washington, DC 20418.)

Letter to the Editor

SGR Vol. XIV, No. 11 commented that, "some of the Defense Department's favorite universities" recoil at government-imposed secrecy, but among them "industry-financed secrecy is, mysteriously, another matter." The following response is from Francis E. Low, Provost of MIT, who also discusses another subject of recurring interest to SGR, indirect costs on federal research grants:

... you imply that "industry-financed secrecy" is looked at differently than "government-imposed secrecy." At MIT, this is untrue. In neither case, do we agree to secrecy of our research results. We do allow a principal investigator to be given proprietary data by an industrial sponsor when that data is necessary to do the research. The research itself must be open, but we agree to describe it in such a way that the proprietary data not be revealed in any publication. The same holds for classified data.

To repeat: the distinction is between agreement to protect pre-existing proprietary or classified data and the refusal to perform research which cannot be freely published. I believe there is no industry-government asymmetry on this issue.

There certainly must have been a time in the past when fat federal research budgets tempted many university administrators to milk the government as much as possible, and it may be that some succumbed. That is no longer the case, and I can assure you, speaking as an ex- and future physicist, that even the most hardbitten vice president for financial affairs now understands that higher overhead essentially means less research. There are serious efforts in the major private research universities to hold down indirect costs; efforts spurred on by the obvious fact that a large share of almost all indirect cost pools is *not* reimbursed but is paid by universities out of general funds . . .

Acid Rain and Transported Air Pollutants: Implications for Public Policy, report by the Congressional Office of Technology Assessment, four years in the works, presents an extensive collection of data and analysis about the big and growing problem and the many uncertainties about its origins and treatment; there's ample meat here for the major contestants, several of whom immediately hailed the report as supporting their position. OTA abstained from any expression of preference for solutions to this politically abrasive issue, but in regard to the Administration's footdragging recommendations for perhaps another decade of research, it did note that "Significant advances in scientific understanding over this time period . . . are by no means certain."

(323 pages, \$9.50, GPO Stock No. 052-003-00956-1, available from Superintendent of Documents, USGPO, Washington, DC 20402.)

An Analysis of Administration Strategic Arms Reduction and Modernization Proposals, a lucid primer, prepared by the Congressional Budget Office, on the Administration's "build-down" proposal, which, though of dubious sincerity, is being touted by the election-bound Mr. Reagan as evidence of his yearning for what he had so long shunned and ridiculed. CBO says build-down would add to east-west nuclear stability and save about \$28 billion by year 2000.

(75 pages, no charge, available from Congressional Budget Office, House Annex 2, Second and D Sts. Sw., Washington, DC 20515.)

DeSimone to Head Engineer Societies

Daniel V. DeSimone has been appointed Executive Director of the American Association of Engineering Societies, Inc., in New York City. DeSimone served as Deputy Director of the Congressional Office of Technology Assessment from its founding in 1973 to 1980, when he became a consultant.

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New Immigration Bill Favors Scientists, Engineers

Whatever traffic control the celebrated Simpson-Mazzoli immigration bill may impose on the "huddled masses yearning to be free," one of its less-noted provisions invites the world to continue sending us its scientists, mathematicians, engineers, computer specialists, and business managers.

In a form virtually identical to the version passed by the Senate in May 1983, the bill that passed the House June 20 embodies some changes in the existing rules of admission for the aforementioned specialists. But, wherever the rules are tightened, there are discretionary provisions for the Attorney General to issue waivers "in the public interest."

The House bill (HR 1510) contains a seemingly tough requirement for foreign graduates of US schools to return to their home countries for two years before they are eligible to apply for permanent residency in the US. That's a big change from the present system, which allows an easy transition from student to immigrant status. But once the word got out, the provision stood no chance at all, since it would decimate the faculty ranks in virtually all American engineering schools—which depend on foreigners to fill teaching posts that are shunned by Americans in favor of high-paying industry.

The final version provides for waiver of the two-year rule if the Attorney General determines a waiver to be in the public interest and any one of the following conditions is met:

- Possession of an advanced degree from a college or university in the United States and offer "of a position on the faculty (including as a researcher) from a college or university in the United States in the field in which he obtained the degree."
- Possession of "a degree in a natural science, math-

ematics, computer science, or an engineering field from a college or university in the United States" and offer of "a research or technical position by an employer in the field in which he obtained the degree"—or,

- Possession of "an advanced degree in business or economics" from an American college or university, and the applicant "has exceptional ability in business or economics, and has been offered employment which requires such exceptional ability."

In all these cases, the bill reaffirms the existing requirement that the foreign graduate obtain certification from the US Department of Labor that US citizens are lacking for the job offered him, and that employment of aliens will not have an adverse effect on wages and working conditions.

In deference to US firms that want to train certain foreigners for management posts in US-owned operations abroad, the bill provides entry-easing waivers for temporary residence. It provides for this in cases where the applicant "has obtained a degree in a natural science, mathematics, computer science, or in a field of engineering or business; and will receive no more than three years of training by a firm, corporation, or other legal entity in the United States, which training will enable the alien to return to the country of his nationality or last residence and be employed there as a manager by the same" organization.

A conference to resolve differences between House and Senate is not expected to take place until late summer. Meanwhile, though House approval was widely hailed as tantamount to final passage by the Congress, surprised opponents are rallying and it's increasingly said that maybe the Simpson-Mazzoli bill won't pass, after all.

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